Journal of Operations Management 41 (2016) 77–94

Contents lists available at ScienceDirect

Journal of Operations Management

journal homepage: www.elsevier.com/locate/jom

Forum

Resource based theory in operations management research

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ARTICLE INFO

Article history:
Accepted 20 October 2015
Available online 17 December 2015
Accepted by Mikko Ketokivi

Keywords:
Resource based theory
Operations management
Strategic management

ABSTRACT

Resource based theory (RBT) has become increasingly popular in operations management research. The development and current application of RBT to the study and understanding of operations management problems and phenomena are reviewed and articles in the recent six plus years across nine journals are evaluated. Based on this review and evaluation, we identify several issues in the overall research and highlight some exemplary research themes in the use of RBT in operations management. Our research suggests that further application of RBT can add richness in operations management research, and has the potential to produce multiple contributions for this field and adjacent fields.

1. Introduction

In recent years there has been an increased emphasis on the use of theory in operations management (OM) research (Choi and Wacker, 2011; Ketchen and Hult, 2011). Because of their applicability and complementarity for the OM field, a number of theories from the organizational sciences have been utilized in the research (Ketchen and Hult, 2011). Among these are the resource-based theory (RBT), transaction cost theory, dynamic capabilities, knowledge-based view, systems theory, resource dependence theory, organizational learning, and social network theory, among others (Choi and Wacker, 2011; Hitt, 2011). Choi and Wacker (2011) suggest that authors have not only used these theories to help explain OM phenomena, they have also extended them, often integrating more than one theory to enrich the theoretical arguments used to address their research questions.

The broad applicability of RBT to multiple disciplines, and these extensions and complementary theoretical approaches, has led to increasing use of this theory in OM research. RBT suggests that firms are able to create and sustain competitive advantages through the collection and integration of rare, valuable, inimitable, and non-substitutable resources (Barney, 1991; Sirmon et al., 2011). This theory has become important for OM research due to its ability to deconstruct the sources of a firm's competitive advantage both internally and across cooperative partnerships, such as in a supply chain. Further, possibly due to the differences in levels of analysis between strategic management (i.e., the firm) and operations (i.e., functions and supply chains), OM research has continued to develop RBT by focusing on the processes within and across firms that can collectively create, or destroy, competitive advantages.

Because of its appropriate application in this field and growing popularity among OM researchers, the purpose of this work is to review and evaluate the application of RBT to the study and understanding of OM problems and phenomena. Recent reviews have provided a current view of the OM field and research within it. For example, Craighead and Meredith (2008) concluded that research in OM has been dynamically evolving by engaging new research methods and foci. Additionally, using different methods, Pilkington and Meredith (2009) and Taylor and Taylor (2009) identified an overlapping set of primary themes (topics) in OM research. Among the most prominent of these themes/topics in OM research are: (1) supply chain management, (2) operations strategy, (3) performance management, and (4) product/service innovation. We focused on these themes because they were highlighted as significant (indeed, three of the four were the most prominent in the co-citation analysis conducted by Taylor and Taylor, 2009) and because of their special complementarity to RBT.

Supply chain management introduces a new focus on the RBT by analyzing the activities along the chain individually and collectively, and the extent to which those activities create resources for the focal firm. Operations strategy establishes a connection

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http://dx.doi.org/10.1016/j.jom.2015.11.002
0272-6963/

between inputs and outputs through operations, corporate strategy, and the synergies gained from integration/alignment of business and operation processes. Performance management and RBT both focus on the effective and efficient use of resources internally and cooperatively to help a firm outperform its rivals (gain a competitive advantage). Product/service innovation involves the introduction of new products or services to meet the customers' or market needs and is complementary to the other topics. All four topics are important in OM (Craighead and Meredith, 2008; Pilkington and Meredith, 2009; Taylor and Taylor, 2009) and offer a framework for the understanding of the development of RBT within OM research.

The primary objectives of this review are twofold: (1) to holistically understand the development of RBT and the OM field separately and collectively to date, with a focus on the most recent six plus years to identify the current state of such research, and (2) to offer suggestions for enhancing the integration of RBT and OM in future research. In doing so, this research contributes to both OM and RBT research going forward. Specifically, this work clarifies the use and integration of RBT across a variety of sub-disciplines or fields in OM. Further, by highlighting themes derived from the integration of RBT with OM research, we identify concerns in the general theoretical and empirical development that might hinder the value or contribution of future research. Lastly, we propose areas for future research with RBT across a variety of phenomena and theories used in OM.

The remainder of this review is structured as follows. First, we provide a brief history of RBT's development across disciplines, followed by an overview of previous research that explains the complementarity of RBT and OM concentrating across the four primary OM foci. Next, we describe our review methodology and report the themes and concerns identified from the most recent six plus years of research. Finally, we conclude with a discussion of future research opportunities in light of our findings.

2. Resource based theory development

RBT is a dominant paradigm in strategic management, and has become increasingly popular in adjacent and complementary fields such as OM and marketing, and management sub-disciplines such as human resource management and entrepreneurship. Although much of the current RBT research has been developed by strategic management scholars, it originated in the field of economics in the work of Edith Penrose (1959). Originally, it was not well accepted by the industrial organization (I/O) economists because RBT assumes that firms within an industry are heterogeneous based on differences in their resources. Whereas, the dominant thinking in I/O economics is that any heterogeneity across firms is only temporary as homogeneity is assumed to develop within an industry over time.

The field of strategic management assumes that firms strive to differentiate themselves from rivals to earn and sustain a competitive advantage. Therefore, it is not surprising that strategic management scholars identified and translated Penrose's original ideas to understand how firms create advantages over industry rivals with their strategies. Wernerfelt (1984) was one of the first to do so by linking competition among product market positions to competition among resource positions. A scholarly dialog between Barney (1986, 1991) and Dierickx and Cool (1989) further advanced our understanding of resource-based competitive advantages. Dierickx and Cool (1989) proposed a model of asset stocks and flows to explain the development and sustainability of competitive advantages. Specifically, they suggest that asset stocks are strategic to the extent that they are subject to time compression diseconomies, path dependencies, interconnectedness, social complexities, and causal ambiguity which collectively (or sometimes individually) lead to competitive advantages. Dierickx and Cool (1989) also argue that a firm's sustainable competitive advantage is contingent on the firm's ability to continuously recombine its asset stocks and apply them to new market opportunities. Thus, a firm's most critical resources are accumulated rather than acquired in strategic factor markets. These ideas help to explain how similar bundles of resources between two firms can have different effects on performance, and also why similar investments by two different firms over the same period of time may not result in the same outcomes.

Barney (1991) built upon these ideas to suggest that firms need valuable and rare resources to gain a competitive advantage, but in order to sustain that advantage over time, the resources must also be difficult to imitate and non-substitutable by other firms' resources. This simple, logical, and easy to understand explanation of RBT has become the most popular model used in strategic management research; however, it has also been the subject of criticism (Priem and Butler, 2001). Some of those criticisms include the static nature of these arguments and the fact that it ignores the potential influence of the external environment. Further, there is some confusion in the research following Barney (1991) regarding the distinctions between resources and capabilities. For example, Leiblein (2011) suggested that many of the fundamental ideas and constructs of these perspectives are being used without clear distinction, creating an overuse of the concepts resulting in a lack of clarity, despite previous attempts to delineate these two concepts (e.g., Makadok, 2001).

Recent work extending Barney's (1991) RBT has helped to overcome some of these criticisms by drawing from and building on the original, but more nuanced ideas of seminal works. Specifically, the ideas surrounding the importance of managing resources controlled by a firm (Penrose, 1959), the necessity to consider managerial decisions (Amit and Schoemaker, 1993), and the dynamic nature of bundling, unbundling, and rebundling of resources (Black and Boal, 1994) have become more prominent in RBT alongside the ideas of non-substitutability and inimitability. Interestingly, parallel theoretical developments occurred across a variety of management subfields that sought to address such criticisms and advance RBT. For example, in strategic management research, Sirmon et al. (2007) argued that holding valuable, rare, inimitable, and non-substitutable resources was a necessary but insufficient condition for firms to achieve a competitive advantage. In short, they stated that firms must manage those resources effectively. Sirmon et al. (2007) suggested that managing or orchestrating the firm's resources included structuring the resource portfolio (acquiring, accumulating/developing, and divesting resources), bundling resources to create capabilities, and then leveraging those capabilities with the appropriate strategies (matched to the capabilities). In orchestrating the firm's resources, managers must select, develop, and bundle both tangible and intangible resources in the creation of capabilities. Alternatively in OM research, Grewal and Slotegraaf (2007) argued for the importance of managerial decisions on resource acquisition and deployment, while Jeffers et al. (2008) provide evidence that the value of a resource depends on integration with other resources in the bundle composing the firm. This logic is clearly parallel to resource management regarding both the importance of managerial actions and integration/synchronization across the firm, but the timing suggests this research was developed independently.

Regardless of the general terminology, intangible resources are more likely to produce a competitive advantage because their value is more difficult to imitate (e.g., ambiguous cause and effect) and their function(s) more difficult to substitute (Hitt et al., 2001; Hitt et al., 2006). Further, to build a competitive advantage, the resource portfolio, creation of capabilities, and designing and